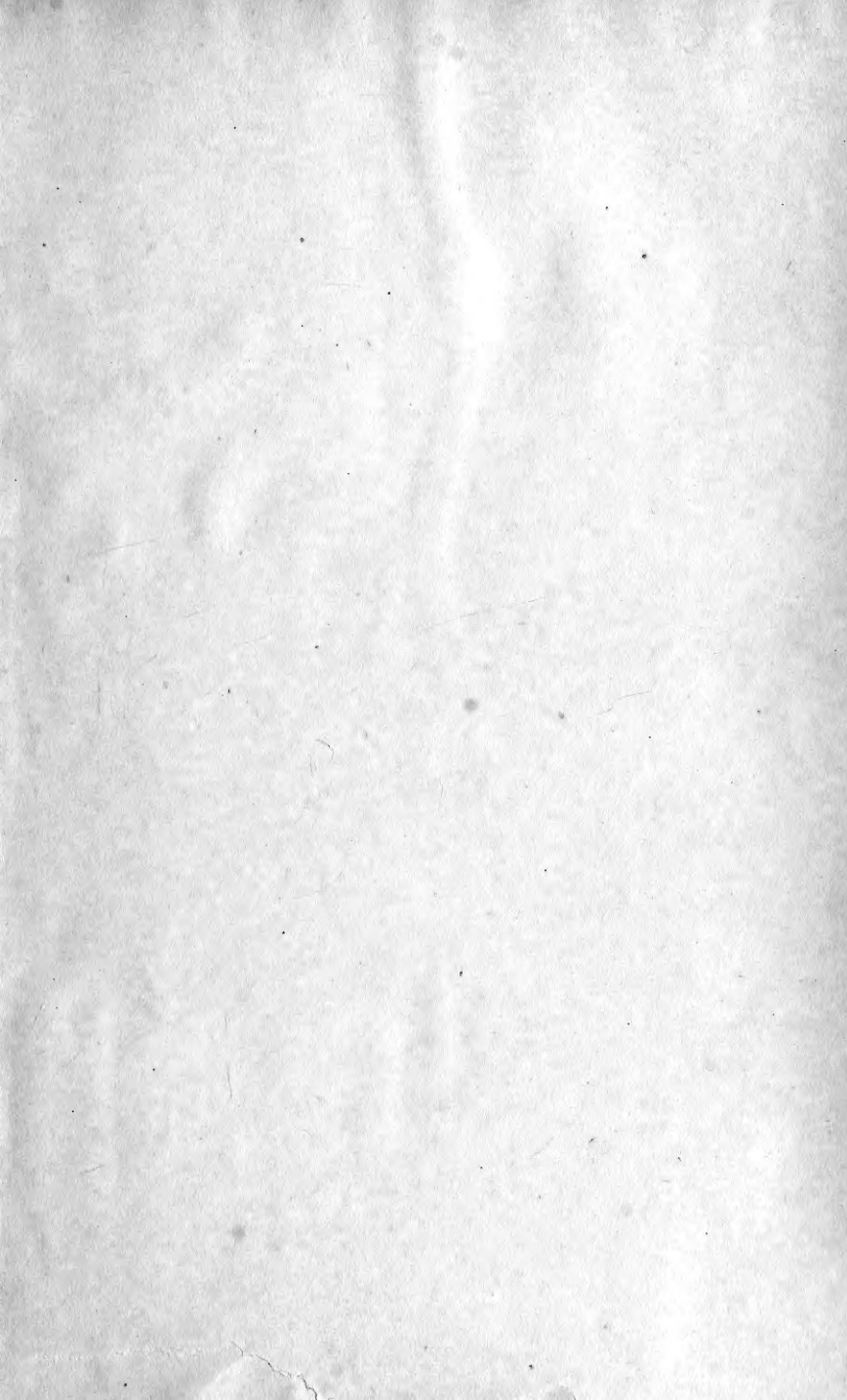


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BRITISH AMPHIPODA:

IV.

FAMILIES

STEGOCEPHALIDÆ TO ÆDICERIDÆ
(PART.).

BY

CANON NORMAN, M.A., D.C.L., LL.D., F.R.S., ETC.

British Amphipoda.—IV. *Families Stegocephalidæ to Ædiceridæ* (part.). By Canon NORMAN, M.A., D.C.L., LL.D., F.R.S., &c.*

[Plate III.]

Fam. VI. *Stegocephalidæ*.

Genus 1. *STEGOCEPHALOIDES*, G. O. Sars.

81. *Stegocephaloides christianiensis*, Boeck.

1869. *Stegocephalus ampulla*, Norman, "Last Report Dredging Shetland Isles," Brit. Assoc. Rep. for 1868, p. 276 (nec *Cancer ampulla*, Phipps).

1870. *Stegocephalus christianiensis*, Boeck, (137) p. 48.

1876. *Stegocephalus christianiensis*, Boeck, (138) p. 424, pl. viii. fig. 4, pl. ix. fig. 1.

1892. *Stegocephaloides christianiensis*, G. O. Sars, (142) p. 202, pl. lxx. fig. 2.

Hab. St. Magnus Bay, Shetland, 50 fathoms, 1867 (A. M. N.); 'Porcupine,' 1869, Stat. 18, to the west of Galway, 183 fathoms: *Mus. Nor.* Loch Fyne, 40–70 fathoms (D. R.); S.W. of Ireland, 750 fathoms, 1888, and west coast of Ireland off the Skilligs, 52–62 fathoms, 1890 (specimens in Dublin Museum, fide A. O. W.).

Distrib. Trondhjem Fiord, Norway, 40–300 fathoms (A. M. N.); West Norway (G. O. Sars): *Mus. Nor.* Sars states that it is found as far north as the Lofoten Islands. Bohuslän (*Malm*); Skagarak (*Meinert*); Belle Ile, France (*Chevreaux*).

[Genus 2. *STEGOCEPHALUS*, Kröyer.

[*Stegocephalus inflatus*, Kröyer.

1842. *Stegocephalus inflatus*, Kröyer, Naturhist. Tidsskr. vol. iv. p. 150; Voyage en Scandinavie &c. pl. xx. fig. 2.

1876. *Stegocephalus ampulla*, Boeck, (138) p. 421 (but not *Cancer ampulla*, Phipps).

1892. *Stegocephalus inflatus*, G. O. Sars, (142) pl. lxix.

Off Holsteinborg, Greenland, in 57 fathoms, 'Valorous' Exped., 1875, Stat. 5.

Trondhjem Fiord, 200–300 fathoms; Hardanger Fiord, between the islands Valoddin and Hidle, 110 fathoms (in both these cases I found it among *Lophohelia prolifera*); also

* See for preceding paper 'Annals,' vol. v. 1900, p. 323.

Klosterelv Fiord, East Finmark (*A. M. N.*); West Norway (*G. O. Sars*); 'Triton,' 1882, Faroe Channel, lat. $60^{\circ} 9' N.$, long. $7^{\circ} 16' W.$, in 466 fathoms; Spetsbergen (*Lovén*); 'Vega' Exped., lat. $67^{\circ} 7' N.$, long. $173^{\circ} 24' W.$ (*i. e.* Behring's Strait), 24 fathoms (from *Stockholm Mus.*); 'Willem-Barents,' Barents Sea (*Stebbing*); U.S. Fish. Comm., Gulf of Maine, 51 fathoms (*S. I. Smith*): *Mus. Nor.* It will thus be seen that this is a true Arctic species with circumpolar distribution.]

Genus 3. ANDANIA, Boeck.

82. *Andania abyssi*, Boeck.

1870. *Andania abyssi*, Boeck, (137) p. 49.

1876. *Andania abyssi*, Boeck, (138) p. 426, pl. ix. fig. 2.

1892. *Andania abyssi*, G. O. Sars, (142) p. 207, pl. lxxi. fig. 2, and pl. lxxii. fig. 1.

Hab. 'Porcupine,' 1869, Stat. 24, south of Rockall, lat. $56^{\circ} 26' N.$, long. $14^{\circ} 28' W.$, 109 fathoms: *Mus. Nor.*

Distrib. Trondhjem Fiord, 200–300 fathoms (*A. M. N.*); West Norway (*G. O. Sars*): *Mus. Nor.* Sars speaks of it as a true deep-water form, only occurring in greater depths from 200–400 fathoms; it has occurred from Southern Norway northwards to the Lofoten Islands.

Fam. VII. Amphilochidæ.

Genus 1. AMPHILOCHUS, Bate.

83. *Amphilochus manudens*, Bate.

1862. *Amphilochus manudens*, Bate & Westwood, (1) vol. i. p. 180, ♂.

1876. *Amphilochus concinnus*, Stebbing, "Some new and little-known Amphip. Crust.," Ann. & Mag. Nat. Hist. ser. iv. vol. xviii. p. 443, pl. xix. figs. 1 a, b, ♀.

1876. *Callimerus acutidigitata*, id. ibid. p. 445, pl. xx. figs. 3 a, b.

1890. *Amphilochus Boeckii*, Meinert, (71) p. 160.

1892. *Amphilochus manudens*, G. O. Sars, (142) p. 217, pl. lxxiv.

Hab. Off Farland Point, Cumbræ, 20 fathoms (*A. M. N.*): *Mus. Nor.* Mull (*G. Brook*, fide *T. S.*); Upper Loch Fyne and Granton Harbour, Firth of Clyde (*T. S.*); St. Andrews (*M'Intosh*); off North Wales and Isle of Man (*A. O. W.*); Torbay (*Stebbing*); Jersey (*Sinel & Hornell*).

Distrib. Dröbak, Christiania Fiord, and Trondhjem Fiord, 200 fathoms (*A. M. N.*): *Mus. Nor.* On Norwegian and Finmarkian coasts, not rare from Christiania to Vadsö (*G. O. Sars*); Greenland (*Hansen*); Kattegat (*Meinert*); west coast of France (*Chevreaux*).

84. *Amphilochus tenuimanus*, Boeck.1870. *Amphilochus tenuimanus*, Boeck, (137) p. 51.1876. *Amphilochus tenuimanus*, Boeck, (138) p. 437, pl. ix. fig. 7.1892. *Amphilochus tenuimanus*, G. O. Sars, (142) p. 218, pl. lxxv. fig. 1.

Hab. Cumbrae (*D. R.*); Firth of Clyde (*T. S.*); off Spurm Head, Yorkshire (*T. S.*).

Distrib. Sars says that it is a deep-water form living in 100–200 fathoms, especially among deep-sea corals, and that it is found in several places and West Norway.

85. *Amphilochus neapolitanus*, Della Valle. (Pl. III. fig. 1.)1893. *Amphilochus neapolitanus*, Della Valle, (139) p. 595, pl. xxix figs. 16, 17.1895. *Amphilochus melanops*, A. O. Walker, "Revision Amphipoda of Liv. M. B. C. District," Trans. Liv. Biol. Assoc. vol. ix. p. 298, pl. xviii. fig. 12, pl. xix. figs. 13–15.

Hab. Off Little Ormes Head, Denbighshire, 5–7 fathoms (*A. O. W.*); Falmouth Harbour; Jersey, tide-marks (*A. M. N.*): *Mus. Nor.* Also Menai Strait, near Beaumaris, 5–10 fathoms (*A. O. W.*).

Distrib. Naples (*Della Valle*): *Mus. Nor.* West France (*Chevreux*).

Having compared typical specimens of *A. melanops* kindly given me by Mr. Walker, and other British examples taken by myself in the localities mentioned above, with a specimen of *A. neapolitanus* received from Della Valle, I am satisfied as to their identity. *A. neapolitanus* and *A. brunneus*, both described by Della Valle, are very closely allied. Of the latter I took several specimens at Naples in 1887, and thus have had the opportunity of comparing the two forms. The one point in which they are described by Della Valle as differing consists in the character of the gnathopods: those of the second pair are very broad, triangular, and the *carpal process reaches to the extremity of the posterior margin of the hand*; the armature of the palm and dactylus is exactly as represented by Della Valle in the allied species *A. brunneus* (Della Valle, pl. xxix. fig. 14), the palm being bounded by two spines and its edge excessively finely denticulated, and within the denticulations a row of small spinules.

Mr. Walker's fig. 14 gives the carpal process shorter than in any specimen I have seen; but in *A. brunneus* it only extends about half the length of the hand. The very close resemblance of the species might raise a question in the mind whether they are really distinct. In favour of their distinction is the fact that all the specimens I took at Naples agreed

with *A. brunneus* and all the British examples which I have examined agree with *A. neapolitanus*. Of this last species Della Valle wrote that he had only seen a single specimen; but he must have obtained others subsequently, since immediately after the publication of his work he kindly sent me an example. *A. tenuimanus*, G. O. Sars, is distinguished from the present species by the character of the gnathopods, and especially by the telson exceeding in length the peduncle of the last uropods, whereas in *A. neapolitanus* the telson is much shorter and scarcely equals half the length of the peduncle of the much produced last uropods.

Genus 2. AMPHILOCHOIDES, G. O. Sars.

86. *Amphilochoides serratipes* (Norman).

1869. *Probolium serratipes*, Norman, "Last Report Dredging Shetland Isles," Brit. Assoc. Rep. for 1868, p. 273.

1892. *Amphilochoides odontonyx*, G. O. Sars, (142) p. 221, pl. lxxv. fig. 2 (nec *A. odontonyx*, Boeck).

1895. *Amphilochoides Boeckii*, G. O. Sars, (142) p. 690.

Hab. St. Magnus Bay, Shetland, in 50 fathoms; Isle of Cumbræ, 5 fathoms (*A. M. N.*): *Mus. Nor.* Blackwaterfoot, Arran, N.B., 20 fathoms (*D. R.*); 8 miles off Fleshwick Bay, Isle of Man, 33 fathoms (*A. O. W.*).

Distrib. West Norway (*G. O. Sars*): *Mus. Nor.* On the Norwegian coast here and there from Christiania to the Trondhjem Fiord, in 50-100 fathoms (*G. O. Sars*); Concarneau (*Chevreaux*).

87. *Amphilochoides odontonyx*, Boeck.

1870. *Amphilocheus odontonyx*, Boeck, (137) p. 51.

1876. *Amphilocheus odontonyx*, Boeck, (138) p. 434, pl. xi. fig. 3.

1892. *Amphilochoides pusillus*, G. O. Sars, (142) p. 222, pl. lxxvi. fig. 1.

1895. *Amphilochoides odontonyx*, id. *ibid.* p. 690.

1896. *Amphilochoides odontonyx*, T. Scott, Fourteenth Annual Rep. Scotch Fish. Board, p. 159, pl. iv. figs. 4-6.

Hab. Plymouth, 8 fathoms, 1887 (*A. M. N.*): *Mus. Nor.* Near Bass Rock, Firth of Forth, 22-23 fathoms; St. Andrews Bay; off Spurm Head, Yorkshire; several places in the Clyde district (*T. S.*).

Distrib. Christiania Fiord, 20-40 fathoms, and Vadsö, E. Finmark, 30-60 fathoms (*G. O. Sars*); Denmark (*Meinert*).

88. *Amphilochoides intermedius*, T. Scott.

1896. *Amphilochoides intermedius*, T. Scott, Fourteenth Annual Report Scotch Fish. Board, p. 159, pl. iv. figs. 1-3.

Hab. Various parts of the Firth of Forth (*T. S.*).

Genus 3. GITANOPSIS, G. O. Sars.

89. *Gitanopsis bispinosa* (Boeck).

1870. *Amphilochus bispinosus*, Boeck, (137) p. 51.

1876. *Amphilochus bispinosus*, Boeck, (138) p. 435, pl. x. fig. 1.

1892. *Gitanopsis bispinosa*, G. O. Sars, (142) p. 224, pl. lxxvi. fig. 2.

Hab. "Dredged off Blackwater-foot, Arran, N.B., in 20 fathoms, bottom sand and mud" (*D. R.*).

Distrib. Lofoten Islands, Norway (*G. O. Sars*): *Mus. Nor.* South and West Norway as far north as Lofoten Islands, but nowhere in abundance, generally in 50-100 fathoms (*G. O. Sars*); Greenland (*Hansen*); west coast of France (*Chevreux*).

90. *Gitanopsis inermis*, G. O. Sars.

1882. *Gitanopsis inermis*, G. O. Sars, (102) p. 51.

1892. *Gitanopsis inermis*, G. O. Sars, (142) p. 224, pl. lxxvi. fig. 2.

Hab. Specimens taken by Professor G. S. Brady* off Cullercoats, Northumberland, were identified by Mr. Stebbing as this species (*Nat. Hist. Trans. Northumb., Durham, and Newcastle-upon-Tyne*, vol. xiii. pt. 3, 1900, p. 442).

Distrib. Professor Sars has met with this species only in a single locality, and that a very northern one—Vadsö—where it was found rather sparingly in 20-50 fathoms.

Genus 4. GITANA, Boeck.

91. *Gitana Sarsii*, Boeck.

1870. *Gitana Sarsi*, Boeck, (137) p. 52.

1876. *Gitana Sarsi*, Boeck, (138) p. 439, pl. xi. fig. 2.

1878. *Amphilochus Sabrinæ*, Stebbing, "Two new Species of Amphipodous Crustacea," *Ann. & Mag. Nat. Hist.* ser. 5, vol. ii. p. 365, pl. xv. figs. 1 a-g.

1892. *Gitana Sarsii*, G. O. Sars, (142) p. 228, pl. lxxviii. fig. 1.

1893. *Gitana Sarsii*, Della Valle, (139) p. 590, pl. xxix. figs. 18-32.

* It may be desirable to mention that Professor Brady, who has done so much good work among the Entomostraca, does not study the Amphipoda, and that when his name is added to a locality, if it be this present locality the specimens have been determined by Mr. Stebbing, and from all other localities they have been identified by myself.

Hab. Off Little Orme, Denbighshire, 2-7 fathoms (*A. O. W.*); *Mus. Nor.* Tenby (*Stebbing*); Kilchattan Bay, Firth of Clyde, 5 fathoms, muddy sand (*D. R.*); Inchkeith, Firth of Forth (*T. S.*); 8 miles off Fleshwick Bay, Isle of Man, 33 fathoms, and Valentia, Ireland (*A. O. W.*).

Distrib. West Norway (*G. O. Sars*); Baie de Houat, France (*Chevreux*); *Mus. Nor.* Among algæ in shallow water all along coasts of Norway and Finmark (*G. O. Sars*); Spetsbergen (*Norw. North Atlant. Exped.*); Franz-Josef Land, Jackson-Harmsworth Exped. (*T. S.*); Kattegat (*Meinert*); Naples (*Della Valle*).

Genus 5. CYPROIDIA (Haswell?), Stebbing.

=? *Peltocoxa*, Catta.

It is at this time impossible to say in what genus the *Cyproidia damnoniensis*, Stebbing, should be located, and I think it best therefore to leave it where he placed it. As both Della Valle and myself, however, have found this species in the Mediterranean, probability is given to the assumption of Della Valle that *Cyproidia* is a synonym of *Peltocoxa*, Catta, described in 1875* from specimens taken at Marseilles, but that author's description of the genus is so inadequate that it requires much to be assumed to employ it.

Haswell, in his amended description of *Cyproidia* ('Cat. Australian Stalk- and Sessile-eyed Crustacea,' Sydney, 1882), states that the "antennæ are subequal, *superior without an appendage*." If that is really so, *Stegoplax* of G. O. Sars is a synonym. But Stebbing appears to have concluded that the secondary appendage, which is extremely minute, had been overlooked by Haswell, and consequently placed in Haswell's genus his *Cyproidia damnoniensis*, which has such an appendage.

Haswell put two species in his genus, *Cyproidia lineata* and *C. ornata*. Quite recently Mr. Stebbing†, having received specimens of the first of these species from Mr. Haswell, has instituted, apparently on very slight grounds, another genus (*Paracyproidia*) for its reception, but gives us no information as to the antennæ either of his new genus or of *Cyproidia ornata*, which he leaves as the type of Haswell's *Cyproidia*.

* *Peltocoxa Marioni*, Catta, *Revue des Sci. Nat.* vol. iv. 1875, p. 161.

† Stebbing, "Revision of Amphipoda," *Aun. & Mag. Nat. Hist.* ser. 7, vol. iv. 1899, p. 207.

Still more recently Dr. Charles Chilton * has described a species from New Zealand under the name *Cyproidia otakensis*, which accords in all generic characters with *C. damnoniensis*, Stebbing.

Two other species have been characterized under the name *Cyproidia*: one from New Zealand, doubtfully referred by its author to *Cyproidia*, and since affirmed by him to be quite distinct; for this *Cyproidia? crassa*, Chilton †, Mr. Stebbing ‡ has instituted a genus *Tetradeion*.

The other, *Cyproidia brevirostris* of T. & A. Scott I here place in the genus *Peltocoxa*, G. O. Sars, because the upper antennæ have no secondary appendage.

92. *Cyproidia damnoniensis*, Stebbing.

1885. *Cyproidia damnoniensis*, Stebbing, "Descr. of a new English Amphipodous Crustacean," Ann. & Mag. Nat. Hist. ser. 5, vol. xv. p. 59, pl. ii.

1893. *Peltocoxa damnoniensis*, Della Valle, (139) p. 648, pl. xxx. figs. 19-32, pl. lx. figs. 9, 10.

Hab. Starcross, Devon (*C. W. Parker*): *Mus. Nor.* Blackwater-foot, Arran, N.B., 20 fathoms, muddy gravel, and off Fairland Point, Cumbrae, 19 fathoms, gravel (*D. R.*).

Distrib. Naples (*Della Valle & A. M. N.*): *Mus. Nor.* Le Croisic, France (*Chevreux*).

Genus 6. STEGOPLAX, G. O. Sars.

93. *Stegoplax brevirostris* (T. & A. Scott).

1893. *Cyproidia brevirostris*, T. & A. Scott, "On some new and rare Crustacea from Scotland," Ann. & Mag. Nat. Hist. ser. 6, vol. xii. p. 244, pl. xiii. figs. 1-11.

Hab. Loch Fyne (*T. S.*): *Mus. Nor.* Moray Firth, washed from *Filograna implexa* from a depth over 40 fathoms (*T. S.*), 8 miles west of Fleshwick Bay, Isle of Man, in 33 fathoms, and Valentia, Ireland (*A. O. W.*).

* Chilton, "A New-Zealand Species of the Amphipodous Genus *Cyproidia*," Ann. & Mag. Nat. Hist. ser. 7, vol. v. 1900, p. 242.

† Trans. New Zealand Institute, vol. xv. 1882, p. 80, pl. iii. fig. 1.

‡ Ann. & Mag. Nat. Hist. ser. 7, vol. iv. 1899, p. 207.

Fam. VIII. *Stenothoidæ*.

Genus 1. *STENOTHOE*, Dana.

94. *Stenothoe marina* (Bate).

1860. *Stenothoe Danai*, A. Boeck, Förh. ved de Skand. Naturf. 8de Møde, p. 655.

1861. *Montagua marina*, Bate & Westwood, (1) vol. i. p. 58.

1892. *Stenothoe marina*, G. O. Sars, (142) p. 236, pl. lxxx.

Hab. Shetland; Skye; Isle of Cumbræ; Cullercoats, Northumberland; Durham coast; Plymouth; Donegal Bay, Ireland (*A. M. N.*); 'Porcupine,' 1869, Stat. 6, off S.W. Ireland, 90 fathoms; Firth of Forth (*T. S.*): *Mus. Nor.* Moray Firth and off Spurm Head (*T. S.*); St. Andrews (*M'Intosh*); Loch Fyne (*Murray*); North Wales; Isle of Man; near Bray Head, W. Ireland (*A. O. W.*); Jersey and Sark (*Køhler*).

95. *Stenothoe crassicornis*, A. O. Walker.

1897. *Stenothoe crassicornis*, Walker, Rep. Brit. Assoc. for 1896, p. 420.

1897. *Stenothoe crassicornis*, Walker, "New Species of Edriophthalma from the Irish Sea," Journ. Linn. Soc., Zool. vol. xxvi. p. 229, pl. xviii. figs. 3-3e.

Hab. "Three males taken in the bottom tow-net 6 miles W.S.W. of Calf of Man, in 23 fathoms" (*A. O. W.*).

96. *Stenothoe monoculoides* (Montagu).

1861. *Montagua monoculoides*, Bate & Westwood, (1) vol. i. p. 54.

1892. *Stenothoe monoculoides*, G. O. Sars, (142) p. 240, pl. lxxxi. fig. 1.

Hab. Apparently to be found all round our coasts. Shetland; Firth of Clyde; Plymouth; Falmouth; Guernsey; Jersey; Roundstone, Ireland (*A. M. N.*); Cullercoats, Northumberland (*J. Alder*); Starcross, Devon (*C. Parker*): *Mus. Nor.* Farne Islands, Northumberland (*A. M. N.*); Ardbear Bay, Ireland (*Brady & Robertson*); North Wales and Isle of Man (*A. O. W.*); St. Andrews (*M'Intosh*); Firth of Forth (*T. S.*); Loch Fyne (*Murray*); Valentia, Ireland (*A. O. W.*).

Distrib. South and West Norway, as far north as Trondhjem Fiord (*G. O. Sars*); Denmark (*Meinert*); West France (*Chevreaux*); Azores (*Barrois*).

97. *Stenothoe setosa*, sp. n. (Pl. III. figs. 2-4.)

Coxal plates of second peræopods resembling those of *S. marina* in form. Superior antennæ with basal joint longer

than the second; flagellum of twenty-four articulations. Lower antennæ with the last joint of the peduncle one fourth shorter than the penultimate; flagellum of twenty-one articulations. First gnathopods (fig. 2) having the lobe of the meros well rounded at the extremity; hand slightly longer than the wrist, widening distally; palm defined, occupying the slightly oblique extremity. The hand of the second gnathopods (fig. 3) elongated ovate, widest in the middle, front margin evenly and regularly arcuate, fringed throughout with long setæ, the length of which almost equals the breadth of the hand, wholly without spines, tubercles, or crenation, and the palm undefined; finger broad, extending to only half the length of the hand. The last peræopods (fig. 4) have the meral and propodal joints subequal in length, the carpal joint somewhat shorter, the nail half as long as the propodus; the posterior lobe of the meros is well arched, but not greatly developed, extending to half the length of the carpus. Colour white, tinted with rose-colour; eye red.

Hab. A single specimen taken at Plymouth, August 1889 (*A. M. N.*): *Mus. Nor.*

My dissection does not show the mandible, but from the general character of the species it would seem to belong to this genus. *S. setosa* has its nearest known ally apparently in *S. Dollfusi*, Chevreux *. It resembles that species in the form of the first gnathopods and, judging from the drawing, in the proportionate length of the joints of the last peræopods; but it differs in the form of the second gnathopods and the absence of all teething of the palm of its propodus.

Genus 2. METOPA, Boeck.

98. *Metopa Alderi* (Bate).

1861. *Montagua Alderi*, Bate & Westwood, (1) vol. i. p. 61, ♀.

1868. *Metopa norvegica*, Bate & Westwood (nec Lilljeborg), (1) vol. ii. p. 500, ♂.

1876. *Metopa chypeata*, var., Boeck, (138) p. 451, pl. xviii. fig. 5, ♂.

1892. *Metopa Alderi*, G. O. Sars, (142) p. 250, pl. xxxvi.

Hab. Aberdeenshire (*R. Dawson*): *Mus. Nor.* Northumberland coast (*A. M. N.*); Firth of Forth (*T. S.*); Firth of Clyde and Mull of Kintyre (*D. R.*); North Wales (*A. O. W.*); Torbay (*Stebbing*).

Distrib. Norway, from the south northwards to Tromsø (*G. O. Sars*); Spetsbergen and Sweden (*Goës*); Murman

* Chevreux, "Quatrième Campagne de 'l'Hirondelle,' 1888: *Hyale Grimaldi* et *Stenothoe Dollfusi*," Bull. de Soc. Zool. de France, 1891.

coast (*Stuxberg*); Iceland (*Sars*); Denmark (*Meinert*); Holland (*Hoek*); Boulogne (*J. Bonnier*); La Manche (*Chevreaux*).

99. *Metopa norvegica* (Lilljeborg).

1850. *Leucothoe norvegica*, Lilljeborg, "Bidr. till Norra Rysslands och

Norrige fauna &c.," K. Vet.-Akad. Hand. vol. ii. p. 335, pl. xx. fig. 4.

1855. *Montagua pollexiana*, Bate, Brit. Assoc. Rep. p. 57.

1861. *Montagua pollexiana*, Bate & Westwood, (1) vol. i. p. 64.

1887. *Metopa pollexiana*, H. J. Hansen, (141) p. 92, pl. iii. figs. 5, 5 a.

1892. *Metopa pollexiana*, G. O. Sars, (142) p. 269, pl. cxv.

The *Metopa* which Bate and Westwood figured as *Leucothoe norvegica*, Lilljeborg, was the male of *M. Alderi*, and to that species Sars has referred Lilljeborg's species; but from his reference to Bate and Westwood's figure it would almost seem that he had not consulted Lilljeborg's papers. That author's *Leucothoe norvegica* is, it appears to me, undoubtedly the present species. The following description applies to it, and not to *M. Alderi*:—" *L. clypeate*, Kröyer, sat affinis. Antennæ superiores inferioribus longiores, flagello pedunculo longiore, articulo primo secundum superante, et articulo tertio minimo; flagellum antenae inferi ultimo pedunculi articulo brevius vel æquale; manus pedum secundi paris maximæ, dilatatæ, apice vero acuminato, aculeoque marginis posterioris medii validissimo et ungui æquali; epinera quarti annuli thoracici maxima, latitudine vero altitudine parum majore." The italics are Lilljeborg's, but for comparison with *M. Alderi* the statement as to comparative lengths of the antennæ should also be italicized. The figure represents a second gnathopod with the palm projected forwards and the lateral process reaching beyond the palm (*cf.* Sars's figure *p.*² ♂), so that the finger impinges upon it; and in no other species is this the case.

Hab. Shetland; near Holy Island, Northumberland; Durham coast (*A. M. N.*); Aberdeen (*R. Dawson*): *Mus. Nor.* St. Andrews (*M'Intosh*); Firth of Forth (*T. S.*). There is thus no record of it as yet from the west side of our islands except St. Ives, whence Spence Bate received specimens from Mr. George Barlee.

Distrib. Bejan, at entrance of Trondhjem Fiord, Norway, in 30-50 fathoms (*G. O. Sars*); Tromsö (*Schneider*); Greenland (*H. J. Hansen*); Murman coast (*Jarzynski*, *fide Sars*).

100. *Metopa rubrovittata*, G. O. Sars. (Pl. III. fig. 5.)

? 1876. *Probolium Spence-Batei*, Stebbing, Ann. & Mag. Nat. Hist. ser. 4, vol. xvii. p. 344, pl. xix. fig. 4.

1882. *Metopa rubrovittata*, G. O. Sars, (102) p. 90, pl. iv. figs. 2, 2 a.

1892. *Metopa rubrovittata*, G. O. Sars, (142) p. 255, pl. lxxxix. fig. 2.

Hab. Cullercoats, Northumberland, Oct. 5, 1854. Fresh specimens, mounted in Dean's medium at that date, have now their beautiful crimson markings perfectly preserved, exactly corresponding to Sars's coloured drawing. Isle of Cumbrae; Lerwick Bay, Shetland (*A. M. N.*): *Mus. Nor.* Off north side of Little Cumbrae, 10-15 fathoms (*D. R.*); North Wales (*A. O. W.*).

Distrib. Christiansund, Norway, and Vadsö, East Finmark (*G. O. Sars*); Kattegat (*Meinert*); Holland (*Hoek*); West France (*Chevreux*).

101. *Metopa abscisa* *, sp. n. (Pl. III. figs. 6-10.)

1869. *Montagua clypeata*, Bate & Westwood, (1) vol. ii. p. 499 (nec *Leucothoe clypeata*, Kröyer).

Upper antennæ with two first joints of peduncle subequal, third not quite half length of second; flagellum about two and a half times as long as the peduncle, consisting of about 17 articulations. Lower antennæ shorter than the upper, its flagellum shorter than the peduncle; last joint of peduncle slightly longer than the penultimate.

First gnathopods (figs. 6 and 7) with the hand a little shorter than the carpus, oblong, upper and lower margins parallel for the first two thirds of the length, from which point the hinder margin curves upwards to the base of the nail; nail short, not one third the length of the hand; hand with a few setæ but no spines.

Second gnathopods (figs. 8 and 9) with the hand oblong, slightly widening distally, breadth equalling from one half to three fourths of the length; palm absolutely transverse, somewhat shorter than the margin; not toothed and scarcely waved, bounded by a tooth-formed process, near to which the palmar margin is extremely minutely serrated (but the serrations are so minute that they are only visible under a high magnifying-power); finger very stout and strong.

Last peræopods (fig. 10) with the meros and carpus subequal in length, the hinder lobe of the meral joint small, not reaching beyond half the length of the carpus; propodos much longer than the preceding joints; nail as long as the carpus, the tip turned inwards, with a little seta at the base of the tip.

Telson devoid of dorsal spines.

* *Abscisa*, "cut off," in reference to the truncate extremity of the hand of the second gnathopods.

Hab. The specimens I have seen of this species are all from the eastern side of our island. That figured is one of those from Cullercoats, Northumberland, which Bate and Westwood recorded under the name *Montagua clypeata*. Other specimens in my collection are from St. Andrews (*Professor M'Intosh*) and Aberdeen (*Mr. R. Dawson*).

I have thought it best to figure a Cullercoats specimen, since it was one of these which was recorded by Bate and Westwood. My St. Andrews example is, however, more mature, and, agreeing in all other respects, differs somewhat in the form of the hand of the second gnathopod, which is somewhat longer in proportion to the breadth, nearly twice as long as the greatest width; the palm &c. is as in the Cullercoats example.

This species is nearest allied to *M. rubrovittata*, from which it may be easily distinguished by the totally different form of the first gnathopod (fig. 5, first gnathopod of *M. rubrovittata*), by the absolutely transverse palm of the second gnathopods, and by differences in the last peræopods.

My friend the late Dr. D. Robertson, in the appendix to his first report (p. 91, separate copy), recorded "*Metopa clypeata*" from Cumbræ. It is probable that the Amphipod found by him was *Metopa rubrovittata*, since I have on two occasions, in 1854 and in 1885, taken that species at Cumbræ.

Dr. Hoek has described from Holland a *Metopa* nearly allied to *M. rubrovittata* under the name *Metopa Normani* (Hoek, "Crustacea Neerlandica, II.," Tijdsch. der Nederl. Dierkundige Vereen. ser. 2, vol. ii. p. 21 (separate copy), pl. vii. figs. 5 and 5'); but it appears to be more closely allied to *M. rubrovittata* than the species which I have here described.

102. *Metopa borealis*, G. O. Sars.

1882. *Metopa borealis*, G. O. Sars, (102) p. 91, pl. iv. fig. 4 (but not fig. 4 a).

1892. *Metopa borealis*, G. O. Sars, (142) p. 254, pl. lxxxix. fig. 1.

Hab. Isle of Cumbræ, 1885 (*A. M. N.*); South Bay, Firth of Forth, 1888 (*T. S.*); Menai Strait (*A. O. W.*): *Mus. Nor.* Guernsey (*A. O. W.*).

Distrib. Tromsø (*J. S. Schneider*): *Mus. Nor.* Norway (*G. O. Sars*); Greenland (*Hansen*).

103. *Metopa propinqua*, G. O. Sars.

1892. *Metopa propinqua*, G. O. Sars, (142) p. 264, pl. xciii. fig. 1.

Hab. The only record of this species occurring in our fauna

is one by Mr. T. Scott, who found it off Crail in the Firth of Forth in 1892 (Twelfth Ann. Rep. Fishery Board of Scotland, 1894, p. 263).

Distrib. The only specimens known to Sars were taken by him in about 40 fathoms in company with *Cressa dubia* in two places in the Trondhjem Fiord.

104. *Metopa pusilla*, G. O. Sars.

1892. *Metopa pusilla*, G. O. Sars, (142) p. 256, pl. xc. fig. 1.

Hab. Off Fairland Point, Isle of Cumbrae, 20–24 fathoms (*A. M. N.*); Menai Strait, 7–12 fathoms (*A. O. W.*): *Mus. Nor.* Rhos Bay, on north coast of Wales, just below tide-marks (*A. O. W.*).

Distrib. South and West Norway as far north as the Trondhjem Fiord, in comparatively shallow water among Algæ and Hydroids (*G. O. Sars*); Franz-Josef Land, Jackson-Harmsworth Expedition (*Thomas Scott*, Journ. Linn. Soc., Zool. vol. xxvii. 1899, p. 72).

105. *Metopa tenuimana*, G. O. Sars.

1892. *Metopa tenuimana*, G. O. Sars, (142) p. 259, pl. xci. fig. 1.

Hab. A single specimen taken at Shetland in 1867 (*A. M. N.*): *Mus. Nor.*

Distrib. West Norway (*A. M. N.*): *Mus. Nor.* Where Sars's type specimens were also found.

106. *Metopa Bruzelii*, Goës.

1865. *Montagua Bruzelii*, "Crust. Amphip. Maris Spetsberg. &c.," Œfv. af K. Vet.-Akad. Förhand. (p. 522, *fide* Sars), p. 6 separate copy, pl. xxxviii. fig. 10.

1887. *Metopa Bruzelii*, H. J. Hansen, (141) partim (?), p. 97, pl. iv. figs. 2 c–g (? figs. 2 a, b).

1892. *Metopa Bruzelii*, G. O. Sars, (142) p. 261, pl. cxii. fig. 1.

1900. *Proboloides Bruzelii*, Stebbing, Ann. & Mag. Nat. Hist. ser. 7, vol. v. p. 15.

(Nec *Metopa Bruzelii*, Boeck, = *M. Boeckii*, G. O. Sars.)

Hab. Port Erin, Isle of Man, 24 fathoms (*A. O. W.*): *Mus. Nor.* Colwyn Bay and Little Orme, North Wales (*A. O. W.*); Firth of Forth (*T. S.*).

Distrib. Widely distributed in West Norway and Finmark (*G. O. Sars*); Spetsbergen (*Goës*); Greenland (*Hansen*).

Genus 3. *METOPELLA*, G. O. Sars.

First gnathopods not subchelate. Basos of last three peræopods not expanded behind and almost or quite linear in form, and the meros only very slightly produced behind.

107. *Metopella nasuta*, Boeck.

1870. *Metopa nasuta*, Boeck, (137) p. 65.

1876. *Metopa nasuta*, Boeck, (138) p. 465, pl. xviii. fig. 6.

1892. *Metopa nasuta*, Sars, (142) p. 276, pl. xcvi. fig. 1.

Hab. Taken in company with my late friend Dr. D. Robertson in 1888 off Fairland Point, Isle of Cumbrae, in 20 fathoms: *Mus. Nor.* Deep water off May Island, in the Firth of Forth, and in the Moray Firth (*T. S.*).

Distrib. West Norway (*G. O. Sars*): *Mus. Nor.* Hansen records it with doubt from Greenland.

Genus 4. *METOPINA*, gen. nov.

I institute this genus to receive three aberrant forms of *Metopa*, in which the first gnathopods are not subchelate, and have the hand long and very slender, and the terminal joint very minute, flattened, not nail-formed. The second gnathopods are very robust; the last peræopods have the posterior projection of the meros well and often enormously developed. The type species is *Metopa palmata*, Sars; the others are *M. clypeata*, Krøyer, and *M. robusta*, Sars.

108. *Metopina robusta*, G. O. Sars.

1892. *Metopa robusta*, G. O. Sars, (142) p. 270, pl. xcvi. fig. 1.

1894. *Metopa robusta*, Thomas Scott, "Some new and rare Crustacea from Scotland," *Ann. & Mag. Nat. Hist.* ser. 6, vol. xiii. p. 148.

Hab. Firth of Forth, 1884 (*Dr. J. R. Henderson*): *Mus. Nor.* In this same locality Mr. Scott subsequently found three specimens, and first recorded the species as British. He has since also found it in the Moray Firth.

Distrib. Varanger Fiord, East Finmark, 125–150 fathoms, 1890 (*A. M. N.*): *Mus. Nor.* Sars's specimens were from Bejan, in the outer part of the Trondhjem Fiord, and Hammerfest, West Finmark; in both places in 30–50 fathoms among Hydroids. Tromsø (*Schneider*).

Genus 5. *CRESSA*, Böeck.

= *Danaia*, Bate (nec M.-Edw. & Haime).

109. *Cressa dubia* (Bate).

1861. *Danaia dubia*, Bate & Westwood, (1) vol. i. p. 68.

1870. *Cressa Schiödtei*, Böeck, (137) p. 65.

1876. *Cressa Schiödtei*, Böeck, (138) p. 467, pl. xviii. fig. 8.

1876. *Danaia dubia*, Stebbing, "New and little-known Amphipodous Crustacea," Ann. & Mag. Nat. Hist. ser. 4, vol. xviii. p. 444, pl. xix. figs. 2, 2 a-c.

1890. *Cressa dubia*, J. Bonnier, "Les Amphipodes du Boulonnais," Bull. Sci. de France et Belgique, vol. xxii. p. 300, pl. x. figs. 1-11.

1892. *Cressa dubia*, T. Scott, Tenth Ann. Rep. Fishery Board of Scotland, p. 262, pl. viii. fig. 13 (the mandible).

1892. *Cressa dubia*, G. O. Sars, (142) p. 278, pl. xcviii. fig. 2, & pl. cxix. fig. 1.

Hab. Off the Isle of Cumbrae (*A. M. N.*); Torquay (*Stebbing*); *Mus. Nor.* Firth of Forth; Moray Firth; off Tarbert, Loch Fyne (*T. S.*); off Cullercoats, Northumberland, 20 fathoms (*G. S. Brady & fide Stebbing*); North Wales; Isle of Man (*A. O. W.*); Isle of Mull (*G. Brook*).

Distrib. South and West Norway as far north as the Trondhjem Fiord (*G. O. Sars*). Boulogne (*Bonnier*); S. Croisic (*Chevreux*).

Fam. IX. *Leucothoidæ*.

Genus 1. *LEUCOTHOE*, Leach.

110. *Leucothoe spinicarpa* (Abildgaard).

1789. *Gammarus spinicarpus*, Abildgaard, Zool. Dan. vol. iii. p. 66, pl. cxix. figs. 1-4.

1804. *Cancer (Gammarus) articulatus*, Montagu, "Desc. several new Animals found on South Coast of Devonshire," Trans. Linn. Soc. vol. vii. p. 70, pl. vi. fig. 6.

1862. *Leucothoe articulosa*, Bate & Westwood, (1) vol. i. p. 271.

1892. *Leucothoe spinicarpa*, G. O. Sars, (142) p. 283, pls. c. & ci. fig. 1.

1893. *Leucothoe spinicarpa*, Della Valle, (139) p. 652, pl. vi. fig. 4, & pl. xix. figs. 1-2 o.

Hab. Shetland in Ascidians; Skye; the Minch; Cumbrae; Loch Fyne in Ascidians; Lulworth, Dorset; Plymouth; Jersey; Roundstone, Ireland, in Ascidians (*A. M. N.*); Polperro, Cornwall (*Laughrin*); *Mus. Nor.* St. Andrews (*McIntosh*); Firth of Forth (*T. Scott*); Anglesea; Isle of Man; Valentia, Ireland (*A. O. W.*).

Distrib. Hardanger and Trondhjem Fiords, Norway (*A. M. N.*); Adriatic (from Heller and Claus as *L. denti-*

culata, A. Costa); Naples (*Della Valle*): *Mus. Nor.* Kattegat (*Meinert*); Greenland (*Hansen*); W. France (*Chevreur*); Azores (*Barrois*).

111. *Leucothoe Lilljeborgii*, Boeck.

1855. *Leucothoe articulosa*, Lilljeborg, Öfvers. af K. Vet.-Akad. Förhand. p. 126.
 1860 *Leucothoe Lilljeborgii*, Boeck, Forhand. Skand. Naturf. 8de Möde, p. 653.
 1888. *Leucothoe furina*, Chevreux, Bull. Soc. d'Etudes Scient. de Paris, 11^e année, 1^{er} semestre, p. 9 (separate copy) (nec *L. furina*, Savigny).
 1889. *Leucothoe imparicornis*, Norman, "Notes on British Amphipoda," Ann. & Mag. Nat. Hist. ser. 6, vol. iv. p. 114, pl. x. figs. 1-4.
 1892. *Leucothoe incisa*, D. Robertson, "Second Contrib. Cat. Amphip. and Isop. Firth of Clyde, &c.," Trans. Nat. Hist. Soc. Glasgow, vol. iii. (p. 23, separate copy).
 1892. *Leucothoe Lilljeborgii*, G. O. Sars, (142) p. 284, pl. ci. fig. 2.
 1897. *Leucothoe incisa*, Stebbing, "Amphipoda from Copenhagen Museum and other Sources," Trans. Linn. Soc., 2nd ser. Zool. vol. vii. p. 35, pl. x.

The *Leucothoe* described by Sars under the name of *L. Lilljeborgii*, Boeck, is certainly the same as my *L. imparicornis*. My description was taken from a mounted and only partially dissected specimen, and thus the recurved process of the last segment of the metasome could not be seen. It appears to me that the characters by which Mr. Stebbing would separate *L. incisa*, Robertson, from this species are insufficient; the gnathopods, especially those of the first pair, show some differences dependent upon age.

This species has been named at former periods "*Leucothoe furina*" by Sars, Chevreux, and myself.

I am also inclined to think that *Leucothoe serratipalma*, Della Valle, is the same species. The chief difference, and it is a very unimportant one, appears to be that there is a slight serration at the commencement of the palm of the second gnathopods, where the point of the finger impinges on the palm.

Hab. Shetland, 1863 (*A. M. N.*); Banff (*T. Edward*); Ballock Bay and off Fairland Point, Isle of Cumbrae, 20 fathoms (*D. R.*); near the Bass Rock and in Upper Loch Fyne (*T. S.*); Mull (*G. Brook*, fide *T. S.*); Pool Erin, Isle of Man, and Guernsey (*A. O. W.*).

Distrib. Kopervig, west coast of Norway, 40-60 fathoms (*G. O. Sars*); Kullaberg, Sweden (*Lilljeborg*); West France (*Chevreur*); Naples (?) (*Della Valle*).

Fam. X. *Ædiceridæ*.[Genus 1. *ÆDICEROS*, Kröyer.[*Ædiceros saginatus*, Kröyer.

1865. *Ædiceros saginatus*, Goës, "Crust. Amphip. Maris Spetsberg. &c.," *Æfvers. af K. Vet.-Akad. Förhand.* p. 10 (separate copy), pl. xxxix. fig. 18.

1876. *Ædiceros saginatus*, Boeck, (138) p. 257, pl. xiii. fig. 3.

1892. *Ædiceros saginatus*, G. O. Sars, (142) p. 288, pl. cii.

Greenland, lat. 67° 50' N., long. 55° 17' W., 20 fathoms, 'Valorous,' 1875.

Vadsö, East Finmark, 1890 (*A. M. N.*): *Mus. Nor.* Iceland (*Torell*); Spetsbergen (*Goës*); Murman coast (*Jarzynski*); Siberian Polar Sea (*Stuxberg*). A truly Arctic species, the most southern locality from which it has been recorded is Christiansund (*V. Düben*, fide *Sars*).]

[*Ædiceros borealis*, Boeck.

1870. *Ædiceros borealis*, Boeck, (137) p. 82.

1876. *Ædiceros borealis*, Boeck, (138) p. 261, pl. xiv. fig. 1.

1892. *Ædiceros borealis*, G. O. Sars, (142) p. 290, pl. ciii. fig. 1.

Holsteinborg Harbour, Greenland, in 7-35 fathoms, 'Valorous,' 1875.

Finmark (*Boeck*); Kara Sea (*Stuxberg*).

The *Ædiceros borealis* of Buchholz ('Die zweite deutsche Nordpolarfahrt,' 1874, vol. ii. p. 325, pl. v.) cannot be this species, nor, indeed, a member of this genus. It is perhaps *Monoculodes simplex*, H. J. Hansen, but the telson does not seem to agree.]

[Genus 2. *PARÆDICEROS*, G. O. Sars.[*Parædiceros lynceus* (M. Sars).

1858. *Ædiceros lynceus*, M. Sars, "Oversigt over de i den Norsk-Arctiske Region forekommende Krebsdyr," *Christ. Vid.-Selsk. Forhand.* p. 143.

1876. *Ædiceros lynceus*, Boeck, (138) p. 259, pl. xiii. fig. 4.

1883. *Ædiceros lynceus*, J. S. Schneider, "Norges kyster forekommende Arter af familien *Ædiceridæ*," *Tromsø Museums Aarshefter*, vi. p. 14, pl. ii. fig. 12.

1892. *Parædiceros lynceus*, G. O. Sars, (142) p. 292, pl. ciii. fig. 2 & pl. civ. fig. 1.

Holsteinborg Harbour, Greenland, 7-35 fathoms, 'Valorous,' 1875.

Sydvaranger and Varanger Fiord, East Finmark; Svolvær, Lofoten Islands, 5-10 fathoms, 1890 (*A. M. N.*); Tromsø

J. S. Schneider); Spetsbergen (*Lovén*); Gulf of Maine, N.E. America, 90 fathoms (*Prof. S. I. Smith*): *Mus. Nor.* Barents Sea (*Hoek*); Iceland (*Torell*); Murman coast (*Jarzynski*); Siberian Polar Sea (*Stuxberg*); Franz-Josef Land, Jackson-Harmsworth Exped. (*T. S.*); Iceland (*Torell*); East Greenland (*Buchholz*); Barents Sea (*Hoek*); Murman coast, Kara Sea, and Jugor Schar (*Stuxberg*).]

Genus 3. MONOCULODES, Stimpson.

112. *Monoculodes carinatus*, Bate.

1855. *Westwoodia carinata*, Brit. Assoc. Rep. p. 58.

1859. *Ædiceros affinis*, Bruzelius, Skand. Amphip. Gammariden, p. 93, pl. iv. fig. 15, ♂ junior.

1862. *Monoculodes carinatus*, Bate & Westwood, (1) vol. i. p. 165.

1862. *Monoculodes Stimpsoni*, iid. ibid. p. 160.

1876. *Monoculodes affinis*, Boeck, (138) p. 265, pl. xiv. fig. 6, ♀.

1883. *Monoculodes carinatus*, Schneider, Af Norges kyster forekom. Art. af Ædiceridæ, p. 19, pl. i. fig. 4.

1889. *Monoculodes carinatus*, Norman, "Notes on British Amphipoda," Ann. & Mag. Nat. Hist. ser. 6, vol. iii. p. 447, pl. xix. figs. 1-5.

1892. *Monoculodes carinatus*, G. O. Sars, (142) p. 295, pl. cv.

1893. *Ædiceros affinis*, Della Valle, (139) p. 548, pl. iv. fig. 3 & pl. xxxiii. figs. 27-31.

For notes on the above synonymy see my paper in the 'Annals.' It is not *Ædiceros affinis*, Goës.

Hab. Shetland; Isle of Cumbræ; off the Northumberland coast; Plymouth (*A. M. N.*); Moray Firth (*T. Edward*); off May Island, Firth of Forth, 35 fathoms (*Sir J. Murray*): *Mus. Nor.* Loch Fyne (*Sir J. Murray*); Isle of Man, Jersey, and Valentia, Ireland (*A. O. W.*).

Distrib. Florø, Norway (*A. M. N.*); Croisic, France (*Chevreaux*); west coast of Sweden (*Bruzelius*); Kattegat (*Meinert*); Naples (*A. M. N.*).

113. *Monoculodes subnudus*, Norman.

1889. *Monoculodes subnudus*, Norman, "Notes on British Amphipoda," Ann. & Mag. Nat. Hist. ser. 6, vol. iii. p. 450, pl. xviii. fig. 11, & pl. xix. figs. 6-10.

1892. *Monoculodes falcatus*, G. O. Sars, (142) p. 302, pl. cvii. fig. 2.

Hab. Shetland; Sleat Sound, Isle of Skye (*A. M. N.*): *Mus. Nor.*

Distrib. Kors Fiord, near Bergen; Rødberg, in the Trondhjem Fiord, in 150 fathoms, and Klosterelv Fiord, East Finmark (*A. M. N.*): *Mus. Nor.* Sars has found it at several places in West Norway.

114. *Monoculodes borealis*, Boeck.

1865. *Ædiceros affinis*, Goës (nec Bruzelius), "Crust. Amphip. Maris Spetsb. &c.," *Æfv. K. Vet.-Ak. Förh.* p. 11 (sep. cop.) (partim), pl. xxxix. fig. 21' (nec 21).

1870. *Monoculodes borealis*, Boeck, (137) p. 88.

1876. *Monoculodes borealis*, Boeck, (138) p. 278, pl. xv. fig. 4.

1883. *Monoculodes borealis*, Schneider, *l. c.* p. 22, pl. i. fig. 3.

1892. *Monoculodes borealis*, G. O. Sars, (142) p. 298, pl. cvi. fig. 2.

Hab. Dredged off Blackwater-foot, Arran, N.B., in 20 fathoms, muddy sand (*D. R.*).

Distrib. Röddberg, in the Trondhjem Fiord, in 40–150 fathoms; Bog Fiord, E. Finmark, 3–5 fathoms (*A. M. N.*); Tromsö (*Schneider*); *Mus. Nor.* The former is the most southern locality in which it has been found by Sars; Spetsbergen (*Goës*); Greenland (*Hansen*); Kara Sea (*Stuxberg*); Franz-Josef Land, Jackson-Harmsworth Exped. (*T. S.*).

115. *Monoculodes tuberculatus*, Boeck.

1865. *Ædiceros affinis*, Goës (nec Bruzelius), "Crust. Amphip. Maris Spetsb. &c.," *Æfv. K. Vet.-Ak. Förh.* p. 11 (sep. cop.) (partim), pl. xxxix. fig. 21 (nec 21').

1870. *Monoculodes tuberculatus*, Boeck, (137) p. 87.

1876. *Monoculodes tuberculatus*, Boeck, (138) p. 277, pl. xv. fig. 2.

1883. *Monoculodes tuberculatus*, Schneider, *l. c.* p. 29, pl. i. fig. 8.

1892. *Monoculodes tuberculatus*, G. O. Sars, (142) p. 303, pl. cvii. fig. 3.

Hab. A single specimen in tow-net gathering a few miles east of the Island of Arran, N.B. (*T. Scott*).—No doubt the tow-net here meant was a net attached near the dredge, and not at surface.

Distrib. West coast of Norway; Trondhjem Fiord; Varanger Fiord, East Finmark (*G. O. Sars*); Tromsö (*Schneider*); Spetsbergen (*Goës*); Greenland (*Hansen*).

116. *Monoculodes Packardii*, Boeck.

1870. *Monoculodes Packardii*, Boeck, (137) p. 86.

1876. *Monoculodes Packardii*, Boeck, (138) p. 274, pl. xiv. fig. 3.

1883. *Monoculodes Packardii*, Schneider, *l. c.* p. 27, pl. i. fig. 6.

1892. *Monoculodes Packardii*, G. O. Sars, (142) p. 307, pl. cix. fig. 1.

Hab. Loch Striven, Firth of Clyde, 40 fathoms (*D. R.*); *Mus. Nor.* Upper Loch Fyne (*T. S.*).

Distrib. Varanger Fiord, E. Finmark, 125–150 fathoms (*A. M. N.*); Tromsö (*Schneider*); *Mus. Nor.* On whole coast of Norway from Christiania to Vadsö in 10–100 fathoms (*G. O. Sars*).

Genus 4. PERIOCULODES, G. O. Sars.

117. *Perioculodes longimanus* (Bate).

1869. *Monoculodes longimanus*, Bate & Westwood, (1) vol. ii. p. 507.
 1870. *Monoculodes Grubei*, Boeck, (137), p. 85.
 1876. *Monoculodes Grubei*, Boeck, (138) p. 269, pl. xvi. fig. 1.
 1883. *Monoculodes Grubei*, Schneider, *l. c.* p. 24.
 1887. *Monoculodes longimanus*, Chevreux, Cat. Crust. Amphip. du Sud-ouest de la Bretagne, p. 13, pl. v. figs. 1, 2.
 1888. *Monoculodes æquimanus* (Norman, MS.), Robertson, "Contrib. Cat. Amphip. and Isop. of Firth of Clyde," Trans. Nat. Hist. Soc. Glasgow, vol. ii. p. 26 (separate copy), ♂.
 1889. *Monoculodes longimanus*, Norman, "Notes on British Amphip.," Ann. & Mag. Nat. Hist. ser. 6, vol. iii. p. 451, pl. xx. figs. 6-9.
 1892. *Perioculodes longimanus*, G. O. Sars, (142) p. 313, pl. cx. fig. 2, pl. cxi. fig. 1.
 1893. *Ediceros longimanus*, Della Valle, (139) p. 547, pl. iv. fig. 9, pl. xxxiii. figs. 32-36.

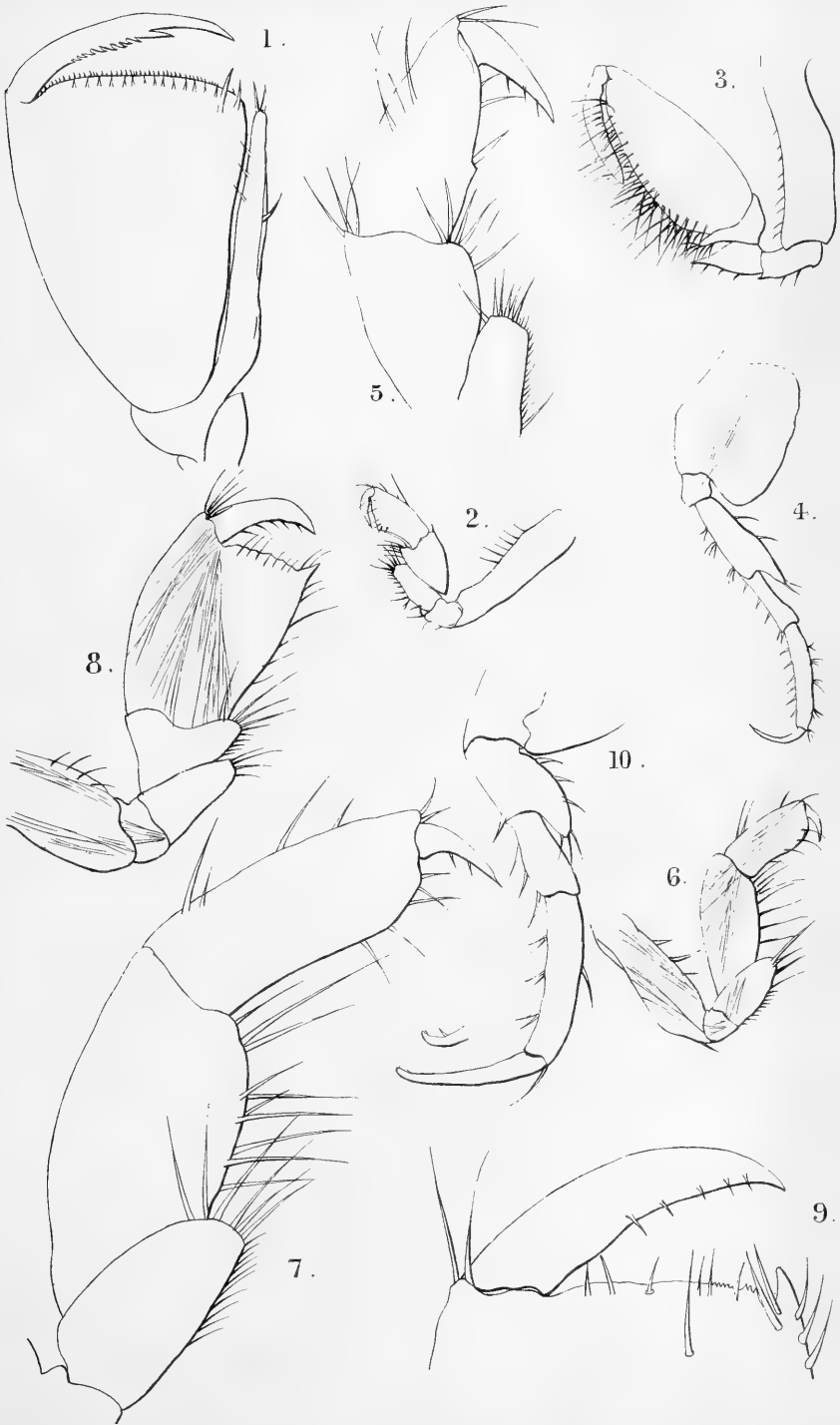
Hab. Kames Bay, Isle of Cumbrae, 1-4 fathoms; Oban; off Marsden, Co. Durham, 10 fathoms; Starcross, Devon, 2-3 fathoms; Clew Bay, Co. Mayo (*A. M. N.*); Banff (*T. Edward*); Firth of Forth (*T. S.*): *Mus. Nor.* Upper Loch Fyne and off Spurm Head (*T. S.*); Isle of Man; North Wales; Jersey; Guernsey; Valentia, Ireland (*A. O. W.*).

Distrib. Svolvær, Lofoten Islands; Trondhjem Fiord, 5 fathoms (*A. M. N.*); South Norway (*G. O. Sars*); Naples (*A. M. N. & Della Valle*): *Mus. Nor.* Kattegat (*Meinert*); West France (*Chevreux*); Spezia (*G. O. Sars*).

EXPLANATION OF PLATE III.

- Fig.* 1. *Amphilochus neapolitanus*, Della Valle. Second gnathopod.
Fig. 2. *Stenothoe setosa*, sp. n. First gnathopod.
Fig. 3. Ditto. Second gnathopod.
Fig. 4. Ditto. Last peræopod.
Fig. 5. *Metopa rubrovittata*, G. O. Sars. First gnathopod.
Fig. 6. *Metopa abscisa*, sp. n. First gnathopod.
Fig. 7. Ditto. Terminal joints of first gnathopod, more magnified.
Fig. 8. Ditto. Second gnathopod.
Fig. 9. Ditto. Palm of second gnathopod, more magnified.
Fig. 10. Ditto. Last peræopod.

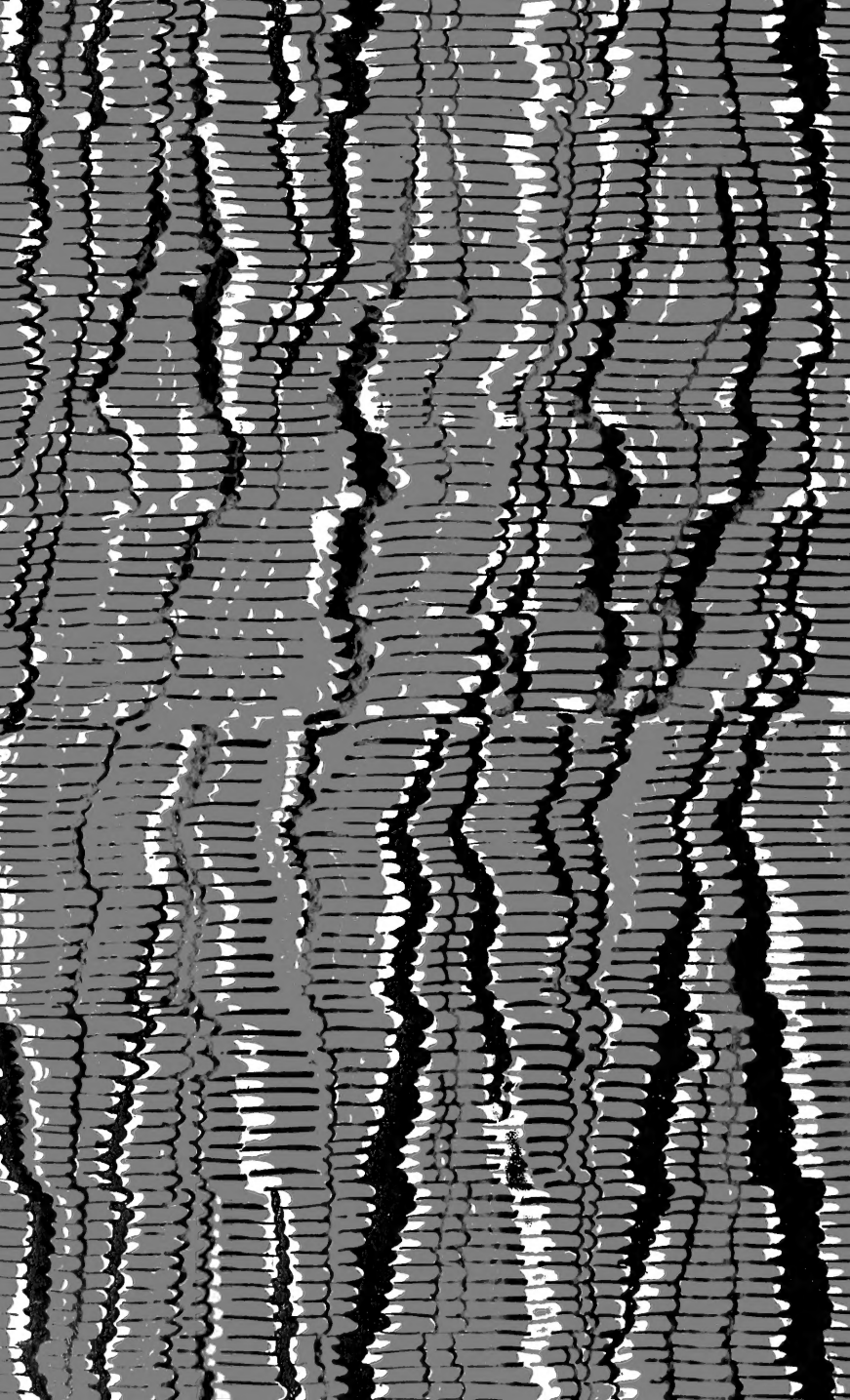


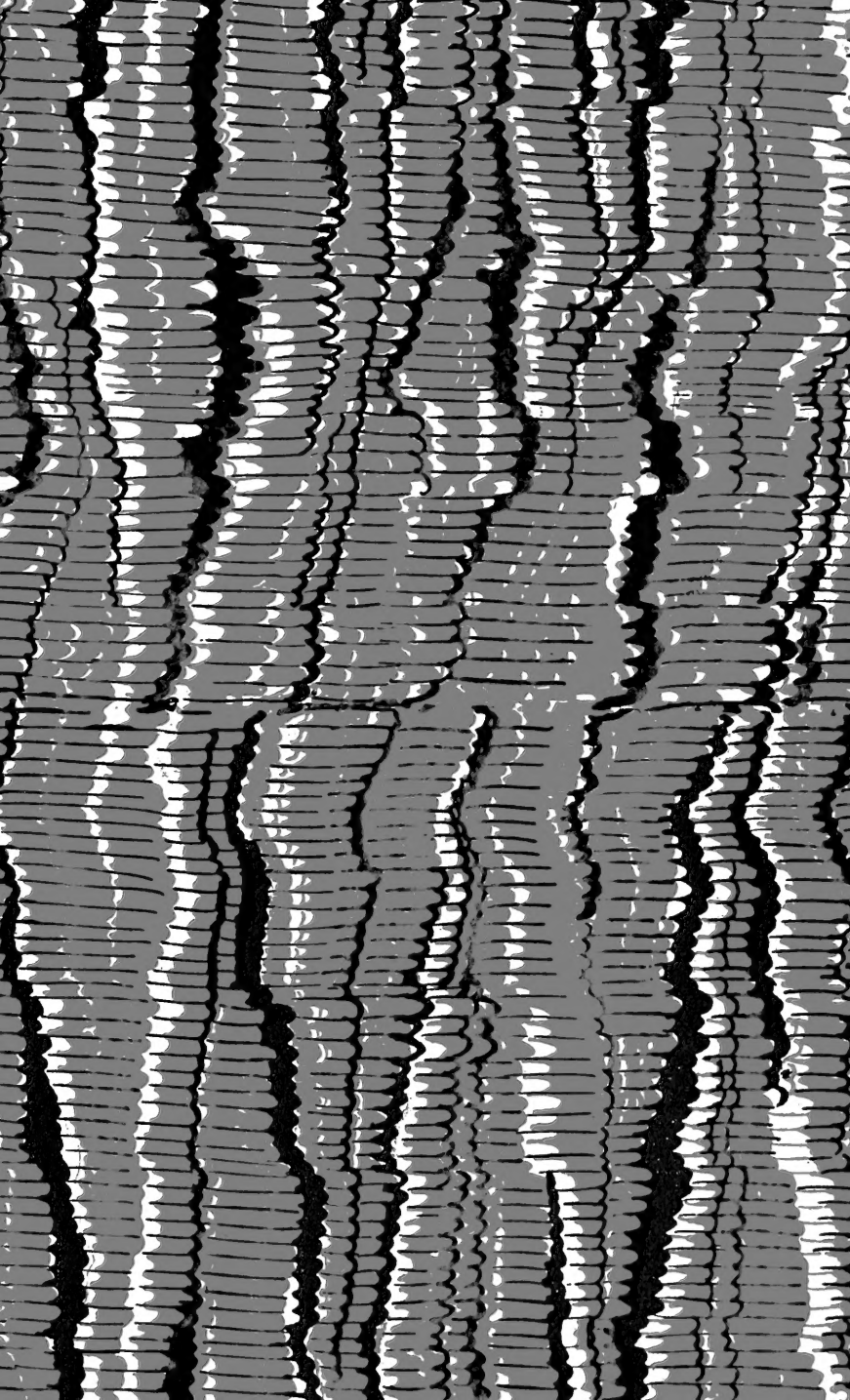


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